Scientists pinpoint gene linked to drug resistance in malaria

October 12 2010

Scientists have shed light on how malaria is able to resist treatment with a leading drug.

Researchers have identified a gene that enables the parasite that causes the infection to resist treatment with the plant-based remedy artemisinin.

In many countries where the parasite has developed resistance to previously effective common treatments such as chloroquine, artemisinin remains the only effective treatment against the infection. However, malarial resistance to artemisinin appears to be developing, potentially creating problems in controlling malaria.

Identification of this gene paves the way for further studies that could eventually help control the development of resistance to artemisinin and lead to more effective drugs for human malaria.

The study, by scientists from the University of Edinburgh and the Universidade Nova de Lisboa, used emerging technology to scan the genetic fingerprint of drug resistant parasites that infect rodents. This technology allows rapid identification of genes that enable the parasite to withstand existing drug treatments.

There are estimated to be between 300 and 500 million cases of malaria each year, occurring in over 90 different countries, according to the World Health Organisation.

Dr Paul Hunt, from the University of Edinburgh's School of Biological Sciences, said: "This knowledge from rodent malaria parasites opens up new directions that will allow this gene to be investigated in human malaria. This may help track the evolution of drug resistance and may eventually enable the design of alternative, effective drugs."

More information: The study is published in *BMC Genomics*.

Provided by University of Edinburgh